

Gulf sturgeon (*Acipenser oxyrinchus desotoi*)

Detailed information regarding the life history, abundance, and distribution of Gulf sturgeon can be found in the Gulf Sturgeon Recovery/Management Plan (FWS and GSMFC 1995). Gulf sturgeon were listed as threatened in 1991, and are under the joint jurisdiction of the USFWS and NMFS. Historically, Gulf sturgeon occurred in most major rivers between the Mississippi and the Suwannee, and in marine waters from the Mississippi to Florida Bay. While little is known about the abundance of Gulf sturgeon through most of its range, estimates exist for the Suwannee and Apalachicola rivers. The USFWS (1990, 1991, 1992 in USFWS and GSMFC 1995) reported an average of 115 individuals larger than 45 cm total length over-summering in the Apalachicola River below Jim Woodruff Lock and Dam. For the Suwannee River, population size estimates ranging from 2,250 to 3,300 individuals have been made (Carr and Rago, unpublished data in USFWS and GSMFC 1995).

The Gulf sturgeon is a subspecies of the Atlantic sturgeon. It is an anadromous fish with a sub-cylindrical body imbedded with bony plates or scutes. The snout is greatly extended and blade like with four fleshy chin barbels in front of the mouth which is protractile on the lower surface of the head. The upper lobe of the tail is longer than the lower lobe. Body color is light brown to dark brown and pale underneath. The species grows to a maximum length of about 8 feet and over 200 pounds in weight.

Populations in the Suwannee River and Apalachicola River have been fairly well studied over the past decade using ultrasonic and radio telemetry and conventional sampling gear. Subadult and adult fish begin migration into rivers from the Gulf of Mexico in early spring and continuing until early May (Carr 1983, Wooley and Crateau 1985, Odenkirk 1989, Clugston *et al.* in press). In late September or October, subadult or adult sturgeon begin downstream migrations. Sturgeon apparently only feed during their stay in marine waters; food items are rarely found in the stomachs of specimens sampled from rivers. In the vicinity of the Suwannee River, the primary foods of juveniles are amphipods with isopods, annelids, dipterans, blue crab parts, lancelets, brachipods, and plant material (Huff 1975, Mason and Clugston 1993).

Gulf sturgeon are long-lived, reaching an age of at least 28 years. Not surprisingly, the fish gain weight during their tenure in marine waters and subsequently lose weight during their stay in fresh water. Growth of fish aged 2 to 5 appears rapid (9.4 inches a year), but decreases to 3.1 inches a year between ages 6 to 8 (L.G. Jenkins, unpublished manuscript). Spawning of Gulf sturgeon is not well documented. However, a few larval sturgeon have been collected in early April and early May in the Apalachicola River (Wooley *et al.* 1982). Observations of ultrasonic tagged gravid females by S. Carr suggests that spawning takes place in the immediate vicinity of springs with primarily rocky substrates. Age at sexual maturity for females ranges from 8 to 17 years, and for males from 7 to 21 years (Huff 1975). Fecundity in Gulf sturgeon, based on three individuals, ranged from 274,680 to 475,000 eggs per female, or an average of 20,652 eggs a pound (Chapman *et al.* 1993).

The Gulf sturgeon is restricted to the Gulf of Mexico and its drainages, primarily from the Mississippi River to the Suwannee River, in Louisiana, Mississippi, Alabama, and Florida. The subspecies may also occur sporadically as far west as Texas, and in marine waters in Florida south to Florida Bay. Historic data indicate that populations have declined. Current population estimates are known only for the Apalachicola River and Suwannee River. The U.S. Fish and Wildlife Service has monitored the Apalachicola River population since 1979. Since 1984, the population size in this river has ranged from 96 to 131 fish, with a mean of 115 (USFWS 1990). In the Suwannee River, which appears to support the most viable population of the Gulf sturgeon, a 1986 mark and recapture study estimates the annual population of between 2,250 to 3,000 fish, averaging about 40 pounds in size (S. Carr, Caribbean Conservation Corporation, pers. comm.). Commercial landing records show that the only consistent fisheries for Gulf sturgeon occurred in West

Florida, especially in the Apalachicola River, from around 1900 to the 1970s.

This fish is anadromous; immature and mature individuals participate in fresh water migrations. Adult fish spend 8 to 9 months each year in rivers and 3 to 4 of the coolest months in estuarine or Gulf waters. Young fish under 2 years of age apparently do not migrate out of rivers and estuaries. In the Suwannee River, adult sturgeon frequent areas near the mouths of springs and cool-water rivers during the summer months. Adult fish tend to congregate in deeper waters of rivers with moderate currents and sand and rocky bottoms. Seagrass beds with mud and sand substrates appear to be important marine habitats (Mason and Clugston 1993).

Directed and incidental take in fisheries and habitat loss have been identified as the major threats to the recovery of Gulf sturgeon.

Gulf sturgeon are easily sampled in rivers because they are in the lower reaches which are bordered (enclosed) by banks. The locations of Gulf sturgeon in the sea, however, are unknown because of the vast area where sampling would be required. However, there have been no reported catches of this species in Federal waters (USEPA 1993a), and their exposure to adverse effects associated with the proposed action would be primarily limited to onshore support activities occurring in inland waterways. If contacted, Gulf sturgeon may be adversely affected by crude oil spills resulting from oil and gas development activities.